**Alabama Community College System**
***Application for a New Instructional Program***

A. General Information:

1. Name of Institution: Snead State Community College

2. Program Title: Avionics Technology Prefix: AVT

3. Date of Application Submission: 8 November 2016

4. Proposed Program Implementation Date: Fall Semester 2017

5. Degree Request: CER: Yes STC: CIP Code: 47.0609

6. Marketing Name: Avionics Technology

   Options (if any): _____

7. Location: Instructional Site: Albertville Aviation Center at Albertville

8. Interactive Distance Learning Delivery:

| Substantial | Yes | % | Partial | Yes | % | No |
|---|---|---|---|---|---|---|
| | | | | **X** | 25% | |

B. Institutional Approval:

Dr. Annette Cederholm Telephone: 251-580-2101 E-mail: Annette.Cederholm@snead.edu
Vice President for Academic Affairs

Dr. Robert Exley Telephone: 205-387-2202 E-mail: rexley@snead.edu
President

B. Program Objectives and Content

1. List objectives of the program as precisely as possible. The objectives should address specific needs the program will meet (institutional, societal, and employability) contiguous with expected learning outcomes and achievements. This is an extremely important part of the proposal. **Objectives must lend themselves to subsequent review and assessment of program accomplishments**.

   A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain all aircraft operating, control, and electronic systems. Includes instruction in flight instrumentation, aircraft communications and homing systems, radar and other sensory systems, navigation aids, and specialized systems for various types of civilian and military aircraft.

   Graduates of the program will be prepared to take the Federal Communications Commission (FCC) General Radiotelephone Operator License examination. Along with the Avionics Technology degree the student will also receive a variety of employability skills and work ethics that will allow him/her to be competitive in other elements of the aviation industry.

   These technicians are in high demand by regional and national commercial airlines, in general aviation, and in support of the military and other governmental agencies that use aircraft.

   To assess the program, a program review will be undertaken. The program review will consist of Level I and Level II reviews and may include Level III reviews. The Level I review of all programs is conducted by the Alabama Community College System. The Level II review is a complete review of the program by the College. Level I reviews processed by the Alabama Community College System may identify a program for Level II review at an earlier date than indicated by its assigned sequence. A Level III review is a system-wide review of a specific instructional program or programs initiated by the Chancellor and predicated upon the findings of instructional program reviews at Levels I and II. An advisory committee with representation from organizations being served by the program graduates will be utilized to periodically review the program's curriculum and advise the program on the establishment, review, and revision of the program objectives. The advisory committee will provide advisement on current and future aspects of the technical field for which the graduates are being prepared.

2. How will this program be related to other programs at your institution?

   This is a new program and is not related to any other program at Snead State.

3. Identify any existing program, option, concentration, or track that this program will replace.

   This program will not replace any existing program at Snead State.

4. Is it likely that this program will reduce enrollments in other programs at your institution? If so, please explain.

   No

5. List new courses that will be added to your curriculum specifically for this program. Indicate course number, title, and credit hour value for each course.

| | |
|---|---|
| AVT 111 Aviation Electronics Theory | 5 semester hours |
| AVT 112 Aviation Electronics Lab I | 5 semester hours |
| AVT 121 Principles of Solid State | 5 semester hours |
| AVT 131 Digital Concepts | 4 semester hours |
| AVT 140 FCC Rules and Regulations | 2 semester hours |
| AVT 141 Introduction to Avionics | 2 semester hours |
| AVT 142 Electronic Communications | 4 semester hours |
| AVT 148 Microprocessors and Interfacing | 4 semester hours |
| AVT 211 Pulse and Radar Circuits | 4 semester hours |
| AVT 212 Aircraft Installation and Soldering | 4 semester hours |
| AVT 213 Aviation Communications | 4 semester hours |
| AVT 214 Navigation/ILS | 4 semester hours |
| AVT 215 DME/Transporter | 4 semester hours |
| AVT 216 Autopilot/Aircraft Systems | 4 semester hours |

6. Program Completion Requirements:
   - Credit hours required in major (skills emphasis);
   - Credit hours in institutional general education or core curriculum;
   - Credit hours in required electives;
   - Total credit hours required for completion

**Certificate:**

| | Number of Hours |
|---|---|
| General Education Requirements | 0 |
| Applied Technical Core | 58 |
| Total Certificate | 58 |

   - Describe any additional requirements such as a comprehensive examination, practicum, or internship, some of which may carry credit hours included in the list above.

     The Federal Communications Commission (FCC) examination is not included in the curriculum.

   - Attach the Associate Degree, Certificate and/or Short-Term curricula to this proposal as **APPENDIX A**.

7. If there is a recognized specialized accreditation agency for this program, please identify the agency and explain why you do or do not plan to seek accreditation. Indicate if graduation from an accredited program is a requirement to sit for a required licensure exam.

   The Alabama Aviation Center at Albertville is currently certified by the FAA as an aviation technician school. The College will certify to the FAA testing centers that students have completed the program.

8. If passage of a licensure examination is required for employment in the proposed field, identify the examination and the administering body. Also, if a licensure examination is required, an objective relating to passage rates should be developed by the institution.

   After completion of the second semester, students may take the FCC General Radio Operator License exam, Elements 1 and 3 to become certified for Radio Operation and Repair and an Aircraft Electronics Technician (AET) certification, by the National Center for Aerospace & Transportation Technologies (NCATT).

   After completion of the fourth semester, students may take the FCC General Radio Operators License, Element 8 (Radar) exam to become certified for Radar Operation and Repair and the NCATT Endorsement Certifications in Onboard Communication & Safety Systems and Radio Communication Systems; Autonomous Navigation Systems; and Dependent Navigation Systems.

   At the end of the fourth semester, the student may test for Institute of Printed Circuits (IPAC) IPC/WHMA-A-6208 Requirements and Acceptance for Cable and Wire Harness Assemblies Certification;

9. Identify specific Alabama senior institutions which will articulate the transfer of skills-emphasis credits for this program.

   A 2+2 agreement with Auburn University's College of Business in Professional Flight Management and Aviation Management is currently in development.

D. Program Admissions Requirements, Enrollment Projections and Completion Projections

1. Describe briefly the criteria and screening process that will be used to select students for the program.

   Standard admission process will be used for this program.

2. Describe the methodology for determining enrollment projections. If a survey of student interest was conducted, attach a copy of the survey instrument with a summary of results (how many, to whom, response rate) as **APPENDIX B**. Do not submit copies of the individual survey responses.

   No student survey was conducted. This program will be offered along with the Airframe Technology program already established at the Albertville Aviation Center.

3. Provide a realistic estimate of the costs of the program. This should only include the **additional** costs that will be incurred, not current costs. All sources and amounts of funds for program support should be indicated. Also, provide a realistic estimate of enrollment at the time of program implementation and over a five-year period based on the availability of students meeting the criteria stated above.

## ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED AVIONICS PROGRAM

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | TOTAL |
|---|---|---|---|---|---|---|
| FACULTY | $94,500 | $94,500 | $94,500 | $94,500 | $94,500 | $472,500 |
| LIBRARY | $0 | $0 | $0 | $0 | $0 | $0 |
| FACILITIES | $6,500 | $6,500 | $6,500 | $6,500 | $6,500 | $32,500 |
| EQUIPMENT | $8,500 | $8,500 | $8,500 | $8,500 | $8,500 | $42,500 |
| STAFF | $209,250 | $209,250 | $209,250 | $209,250 | $209,250 | $1,046,250 |
| OTHER | $56,738 | $56,738 | $56,738 | $56,738 | $56,738 | $283,690 |
| TOTAL | $375,488 | $375,488 | $375,488 | $375,488 | $375,488 | $1,877,440 |

## SOURCES OF FUNDS AVAILABLE FOR AVIONICS PROGRAM SUPPORT

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | TOTAL |
|---|---|---|---|---|---|---|
| INTERNAL REALLOCATIONS | $400,000 | $400,000 | $400,000 | $400,000 | $400,000 | $2,000,000 |
| EXTRAMURAL* | $0 | $0 | $0 | $0 | $0 | $0 |
| TUITION | $10,846 | $10,962 | $11,078 | $11,310 | $11,600 | $55,796 |
| TOTAL | $410,846 | $410,962 | $411,078 | $411,310 | $411,600 | $2,055,796 |

*Extramural funds from ___Perkins, WFD

## ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 5-YEAR AVERAGE |
|---|---|---|---|---|---|---|
| TOTAL HEADCOUNT ENROLLMENT (FT & PT) | 20 | 25 | 32 | 37 | 42 | 31 |
| NEW ENROLLMENT HEADCOUNT | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | | | | 4-YEAR AVERAGE |
| DEGREE COMPLETION PROJECTIONS | 10 | 15 | 22 | 27 | 32 | 21 |

E. Program need Justification

1. Will the program satisfy a clearly documented need (institutional, societal and employability) in an effective and efficient manner?

   "Aerospace and Defense" is listed in the Alabama Workforce Region 2 strategic plan as a top industry, and it is poised to grow. North Alabama is home to multiple aerospace employers due to the presence of Redstone Arsenal. These contractors are increasingly expanding operations beyond military aviation into civilian aviation. Expanding into the civilian market requires FAA-certified A&P workers. The Alabama Aviation Center at Albertville provides these employers three of the key requirements for this expansion—direct access to an airport, a source for trained employees to support the expansion, and close proximity to Huntsville and Redstone Arsenal to compete for available contracts. This program will therefore support existing industry and make the area more attractive to new employers.

   The Alabama Aviation Center at Albertville, located on Alabama Highway 75 west of downtown Albertville, was opened in 2009 to support the employment needs of the aviation industry in north Alabama.

   There are numerous aerospace employers within a 60 mile radius of the Albertville Airport. Companies include BAE, Sierra Nevada, Yulista Aviation, Calista Corporation, and CSRA.

   Employment of aircraft mechanics and technicians is projected to show little or no change from 2012 to 2022. Job prospects are best for mechanics holding an Airframe & Powerplant credentials. In May 2012, the median annual wage for aircraft mechanics and service technicians was $55,210.

   Aircraft mechanics and avionics technicians held about 138,900 jobs in 2012. Approximately 88 percent were aircraft mechanics. The majority worked for private companies and about 14 percent worked for the federal government

2. If the program duplicates or closely resembles another program already offered in the state, can this duplication be justified?

   This program does not duplicate or resemble any other program at the College. This program is currently being taught at Faulkner State Community College and Enterprise State Community College. We will be taking over the program already established at Enterprise State Community College.

3. What characteristics of the identified need require that it be met by a new program rather than an existing program? Note: in explaining how the proposed program meets this criterion, an institution may refer to the criterion on collaboration and develop a response that addresses both criteria simultaneously). For purpose of this criterion, duplication is defined as the same or similar six-digit CIP Code and award level in the Master Academic Inventory. Institutions should consult with the Department of Postsecondary Education staff during the ISPA phase of application development to determine what existing programs are considered duplicative of the proposed program.

Pursuant to Alabama Act No. 2015-125, the Alabama Aviation College was established as an independent institution within the Alabama Community College System for providing aviation education and training statewide. Enterprise State Community College currently operates and administers the aviation programs located at the Alabama Aviation Center at Albertville.

A review of the Alabama Aviation College's programmatic, financial, and instructional needs and partnership opportunities has determined that the Albertville Aviation Center program administration will be enhanced and better fulfill the mandates and directives of the Act if they are re-aligned and managed under the direction of Snead State Community College. In order to implement, promote, and effect such a re-alignment, proper approval will be sought and gained from the appropriate regulatory and accrediting agencies, including the Alabama Commission on Higher Education (ACHE), the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), and the U.S. Department of Education. In the spirit of cooperation, the presidents of Enterprise State Community College and Snead State Community College are in agreement and signed the attached Memorandum of Understanding.

4. Based on your research on the employment market for graduates of this program, indicate the total projected job openings (including both growth and replacement demands) in your Board of Trustees approved service area as well as the state at large. These job openings should represent positions that require graduates from a program such as the one proposed.

**Projected Employment and Job Openings for AAC Programs 2012-2022**

| | 2012 Employment | 2022 Employment | Job Growth | Annual Job Openings |
|---|---|---|---|---|
| Workforce Regions 2 and 4 | 600 | 660 | 10% | 20 |
| Statewide | 3,670 | | | |
| Nationwide | 121,700 | 124,700 | 2% | |

*Alabama Department of Labor Regions 9 Occupational Projections and U.S. Bureau of Labor Statistics, Occupational Outlook*

5. Give a brief description of the methodology used to determine the projected job openings (such variables as (a) assurance of adequate employer surveys, (b) business/industry markets, and (c) response rate. Cite all relevant sources. Whenever possible, Alabama Department of Industrial Relations employment data/projections should be utilized. If a survey of employment needs was used, attach a copy of the survey instrument with a summary of results as APPENDIX C. Do not submit copies of the individual survey responses.

Alabama Department of Labor, and U.S. Bureau of Labor Statistics.

No employer survey was conducted as this program will be part of the transfer from Enterprise State Community College to Snead State Community College.

6. If the program is primarily intended to meet needs other than, employment needs, present a brief rationale.

The proposed Avionics Technology Program is in response to employer needs in the College's service area.

7. If similar programs are available at other institutions in the state, will any type of program collaboration be utilized? Why or why not? What specific efforts have been made to collaborate with institutions to meet the need for this program? Address qualitative, cost and access considerations of any collaboration that were considered.

   Discussions are being held with Auburn University regarding a 2+2 agreement with the University's College of Business in Professional Flight Management and Aviation Management is currently in development.

8. Will any type of distance education technology be utilized in the delivery of the program on your main campus or to remote sites? If not, why?

   This program will be divided between classroom theory and hands-on laboratory work. The program will be taught in a tradition classroom/lab environment, with selected portions of the theory elements being delivered online. Delivering the theory content online allows for a much more flexible lab schedule, allowing students to more easily complete the program while balancing family and other responsibilities. Students will use a variety of training aids and actual aircraft and aircraft systems to develop manipulative skills and technical competencies. One hundred percent of the General Education portion of the program can be completed online.

   Address the quality, access and cost considerations of using distance technology in the program.

   Quality: The College's already established and evaluated process for ensuring quality distance instruction will be implemented to ensure the quality of these offerings.

   Access and Cost: Because the Avionics Technology program is largely hands-on training, there are limited opportunities for providing instruction via distance learning. However, theory portions of selected courses will be developed for online delivery. All sections of every course at Snead State has a Blackboard course shell for instructors to post course materials and grades. There are approximately 30 computer stations for student use at the existing facility. Snead State's main campus, located 7 miles from the airport, has multiple computer labs available for student use.

C. <u>Program Resource Requirements</u>

1. Number of current employed faculty who teach in the program:

   Faculty: Full-time = Part-time = 1

2. Number of additional faculty who will be employed to teach in the program during the first five years:

   Faculty: Full-time = 1 Part-time = 0

3. If the qualifications of new faculty to be hired differ from requirements stated in Postsecondary Faculty Credentials, indicate such.

   Faculty credentials will be in keeping with Board of Trustees.

4. Briefly describe available and additional support staff who will be provided for the program.

   The Vice President for Academic Affairs along with the Division Director for Business, Computer Science and Technology will oversee this program. A campus director (FAA Certified) will be hired and responsible for day-to-day operations on-site.

5. Describe any special equipment that is necessary for this program, indicating what is currently available, what will be added, and the cost of additional equipment.

   Current equipment is adequate for the program.

6. Describe facilities for the program, indicating what is currently available and any necessary renovations or additional facilities that would be added. Provide a cost estimate for any renovation or additions. If clinical sites are required, provide signed agreements between the institution and the host facility. At a minimum, the total number of slots should equal to the projected number of students cited above.

   The program will be housed at the existing Alabama Aviation Center at Albertville. The 15,049 square foot facility, located at the Albertville Regional Airport, currently has four standard classrooms, three large laboratory areas, multiple storage areas, a break room, and four offices. The classrooms have approximately 30 computer workstations between them. The facility has a capacity of 100 concurrent students.

   The facility is well equipped for both avionics and airframe instruction, with access to 110 and 220 volt electricity, 25 welding stations, two helicopter trainers, 15 system trainers for various aircraft systems (landing gear, cabin atmosphere, oxygen, brakes, etc.), a paint booth, and other training equipment.

7. Provide an indication of the status of the library collections supporting the proposed program. Describe how any deficiencies will be remedied, including the cost of such remedies.

   Snead State has an existing library agreement with Enterprise State to provide library services to students at the site. All library services available to other Snead Students will be available to students via the College's CyberLibrary using any internet-connected device. The CyberLibrary offers direct assistance from Snead's library staff, more than 100,000 titles (books, films, scholarly journals, and periodicals) are available electronically. These materials support every program that Snead offers. Instructors can also schedule direct visits from library staff to their classes.

   Library holdings are believed to be adequate to support the program. However, additional resources may be purchased to meet FAA requirements. Library offerings are reviewed annually and faculty input is solicited to update and maintain the College collection.

## APPENDIX A
## Avionics Technology Certificate

| | Course # | Course Name | Semester Hours |
|---|---|---|---|
| **Semester 1** | AVT 111 | Aviation Electronics Theory | 6 |
| | AVT 112 | Aviation Electronics Lab I | 5 |
| | AVT 121 | Principles of Solid State | 5 |
| | AVT 141 | Introduction to Avionics | 2 |
| | | **SEMESTER HOURS:** | **18** |
| | | | |
| **Semester 2** | AVT 131 | Digital Concepts | 4 |
| | AVT 142 | Electronic Communications | 5 |
| | AVT 148 | Microprocessors & Interfacing | 5 |
| | AVT 211 | Pulse and Radar Circuits | 4 |
| | | **SEMESTER HOURS** | **18** |
| | | | |
| **Summer** | AVT 212 | Aircraft Installation and Soldering | 4 |
| | AVT 213 | Aviation Communications | 4 |
| | | **SEMESTER HOURS** | **8** |
| | | | |
| **Semester 3** | AVT 214 | Navigation/ILS | 4 |
| | AVT 215 | DME/Transponder | 4 |
| | AVT 216 | Autopilot/Aircraft | 4 |
| | AVT 140 | FCC Rules and Regulations | 2 |
| | | **SEMESTER HOURS** | **14** |
| | | | |
| | | **TOTAL CREDIT HOURS** | **58** |

## Current Equipment Inventory at AAC-Albertville

1 AL 14 Retractable Landing Gear Trainer with operational brakes and flaps
1 AS 76 Heating and Vapor Cycle Air Conditioning Trainer
1 AL 76 Cockpit Instrumentation Trainer
1 AL 61 Ice and, Rain Removal Trainer
1 H86 Hydraulic System Trainer
1 AE42-12D Dual Electrical System Trainer
1 AS64 Cabin Atmospheric System Trainer
1 AS60 Fire Suppression System Trainer
1 AS81 Oxygen System Trainer
1 AL36 Brake System Trainer
8 AL41 Beechcraft Main Gear Trainer with wheel and brake
1 H90 Fluid Lines and Fitting Trainer
1 AL 37 Anti-Skid Braking System Trainer
1 Starter/Generator/Alternator Bench Tester
1 Armature Test Set (Growler)
1 CH-47 Landing Gear Strut Assembly
1 Reciprocating engine spark plug cleaner and tester
1 Paint Booth
1 Finger 40” Brake
1 40” Brake
1 Metal Shear
3 Band Saw
1 Drill Press
1 Belt and Disc Sander
1 Scroll Saw
1 Radial Arm Saw
1 Table Saw
1 Solvent Parts Cleaner Station
1 Media Blast Machine

# The Madison County Executive Airport Authority



P.O. Box 110 • Meridianville, Alabama 35759 • (256) 828-3883

Date 10-31-2016

To Whom it may concern:

This letter is sent in support of Snead State Community College's Aviation Maintenance Airframe and Powerplant Technology AAS program. I feel that this program would be a tremendous asset for not only the city of Albertville but the surrounding communities such as Madison County Huntsville area. The structure of the program and the detailed curriculum will give students the knowledge and skills they will need to be successful in the aircraft maintenance field.

The certifications and training would be something that our airport tenants like Yulista and Sierra Nevada would look at when hiring in the future. I also know that in dealing with other business leaders in the community, this program would be something that might benefit many of them as well.

Sincerely,

Tom Sharp, Jr
Chairman

AirMed
THE FASTEST WAY TO RECOVERY

October 28, 2016

To whom it may Concern,

This letter is in support of the Snead Community College's Aviation Maintenance Airframe and Powerplant Technology AAS program. I feel that this program will be a tremendous asset to the area. As a Director of Maintenance of an International Aviation Department, I am in need of qualified and experienced technicians. The students will need the skills and knowledge to succeed in this exciting career they have chosen, and these courses would offer those skills and knowledge. The certifications and the training they receive are necessary to gain access to this industry. I have recently hired 3 technicians, and I had to go outside the area to find qualified personnel. This program would assist the local area to train and retain such qualified individuals. I would also hope this program would help veterans gain the certifications needed from the experience they gained from deployments, if they choose to remain in this career field.

Sincerely,

Larry Adams

Larry Adams
Director of Maintenance
AirMed International

AirMed
THE FASTEST WAY TO RECOVERY

4243 East Lake Blvd.
Birmingham, AL 35217

Office 205-443-4320
Cell 205-602-9196
Larry.adams@airmed.com

To Whom it may concern:

This letter is sent in support of Snead State Community College's Aviation Maintenance Airframe and Powerplant Technology AAS program. I feel that this program would be a tremendous asset for not only the city of Albertville but the surrounding communities as well. The structure of the program and the detailed curriculum will give students the knowledge and skills they will need to be successful in the aircraft maintenance field. The certifications and training would be something that we would look at when hiring in the future. I also know that in dealing with other business leaders in the community, this program would be something that might benefit many of them as well.

Sincerely,

Darryl Brewer

General Manager

Atlantic Aviation - BHM

ATLANTIC

ATLANTIC AVIATION SERVICES ▲ EAST RAMP ▲ 4725 65TH PLACE NORTH ▲ BIRMINGHAM, AL 35206
MAILING ADDRESS ▲ 4725 65TH PLACE NORTH ▲ BIRMINGHAM, AL 35206

Marlin J. Priest
Chief Executive Officer
121 Coshatt Trail
Hoover, AL 35244

October 27, 2016

To whom it may concern:

I am writing today to show my support of the Snead State Community College's Aviation Maintenance Airframe and Powerplant Technology AAS program. I feel that this program would be a tremendous asset for the city of Albertville, the surrounding communities, and the aviation/aerospace industry in north-central Alabama, and neighboring states.

The structure of the program and the detailed curriculum would give students the knowledge and skills they will need to be successful in the aircraft maintenance and electronics fields. The certification, training, and education would be something that I would definitely consider when looking for employees in the future. I also know that in dealing with other business leaders in the community, this program would be something that might benefit many of them as well. I believe this center is well-positioned to have a positive impact for technical training to meet the current and future needs of industry in its area of influence. I also believe it is in the best interest of the center and the business community if the center is aligned with Snead State Community College.

Sincerely,

Marlin J. Priest